

In the Claims:

Please amend Claims 1, 4, 7, 8, and 16 as indicated below. The status of all pending claims is as follows:

1. (Currently Amended) A magnetic recording medium comprising:

a substrate; and

a magnetic layer, ~~comprising~~ including a CoCr-based alloy and ~~non-magnetic~~ nonmagnetic elements other than Cr, and having a multi-layer structure and disposed above said substrate,

said multi-layer structure having a first magnetic layer disposed above said substrate and at least one second magnetic layer disposed directly on said first magnetic layer on an opposite side from said substrate,

said first magnetic layer having a Cr-content larger than that of said second magnetic layer,

said first magnetic layer having a larger sum total content of nonmagnetic elements which are other than Cr and which ~~non-magnetic~~ nonmagnetic elements have a larger atomic radius than Co compared to said second magnetic layer.

2. (Previously Amended) The magnetic recording medium as claimed in claim 1, wherein said first and second magnetic layers include at least one nonmagnetic element selected from a group consisting of Pt, Ta, W and B.

3. (Previously Amended) The magnetic recording medium as claimed in claim 1, wherein said first and second magnetic layers include approximately 8 to 15 at% of Pt, and approximately 1 to 6 at% of B.

4. (Currently Amended) The magnetic recording medium as claimed in claim 1, further comprising:

a first underlayer ~~comprising~~ including a Cr-based alloy and disposed on said substrate; and

a second underlayer ~~comprising~~ including a Cr-based alloy and disposed between said first underlayer and said first magnetic layer,

said second underlayer having a larger sum total content of elements other than Cr than said first underlayer.

5. (Previously Amended) The magnetic recording medium as claimed in claim 4, wherein said second underlayer includes at least one element selected from a group consisting of Mo, Ti, W, V and Ta.

6. (Original) The magnetic recording medium as claimed in claim 4, further comprising:

an intermediate layer made of a Co-based alloy and disposed between said second underlayer and said first magnetic layer.

7. (Currently Amended) The magnetic recording medium as claimed in claim 1 comprising a plurality of second magnetic layers, wherein:

said first magnetic layer has a Cr-content larger than that of a lowermost one of said second magnetic layers disposed closest to said first magnetic layer,

said first magnetic layer has a larger sum total content of nonmagnetic elements which are other than Cr and which ~~non-magnetic~~ nonmagnetic elements have a larger atomic radius than Co compared to the lowermost one of said second magnetic layers; and

between two mutually adjacent second magnetic layers, the Cr-content and the sum total content of the nonmagnetic elements are respectively larger for a second magnetic layer disposed closer to said first magnetic layer.

8. (Currently Amended) A method of producing a magnetic recording medium which includes a magnetic layer ~~comprising~~ including a CoCr-based alloy and ~~non-magnetic~~ nonmagnetic elements other than Cr and having a multi-layer structure, comprising the steps of:

(a) forming a first magnetic layer on a base layer; and

(b) forming at least one second magnetic layer directly on the first magnetic layer,

said steps (a) and (b) being carried out so that a Cr-content of the first magnetic layer is larger than that of the second magnetic layer, and a sum total content of

nonmagnetic elements which are other than Cr and which ~~non-magnetic~~ nonmagnetic elements have a larger atomic radius than Co in the first magnetic layer is larger compared to that of the second magnetic layer.

9. (Original) The method of producing the magnetic recording medium as claimed in claim 8, wherein said steps (a) and (b) form the first and second magnetic layers to include at least one nonmagnetic element selected from a group of Pt, Ta, W and B.

10. (Previously Amended) The method of producing the magnetic recording medium as claimed in claim 8, wherein said steps (a) and (b) form the first and second magnetic layers to include approximately 8 to 15 at% of Pt, and approximately 1 to 6 at% of B.

11. (Original) The method of producing the magnetic recording medium as claimed in claim 8, further comprising the steps of:

(c) forming a first underlayer made of a Cr-based alloy on a substrate; and

(d) forming a second underlayer made of a Cr-based alloy between the first underlayer and the first magnetic layer,

said steps (c) and (d) being carried out so that the second underlayer has a larger sum total content of elements other than Cr than the first underlayer.

12. (Previously Amended) The method of producing the magnetic recording medium as claimed in claim 11, wherein said step (d) forms the second underlayer to include at least one element selected from a group consisting of Mo, Ti, W, V and Ta.

13. (Original) The method of producing the magnetic recording medium as claimed in claim 11, further comprising the step of:

(e) forming, as the base layer, an intermediate layer made of a Co-based alloy between the second underlayer and the first magnetic layer.

14. (Cancelled)

15. (Original) The method of producing the magnetic recording medium as claimed in claim 8, wherein:

said step (b) forms a plurality of second magnetic layers;

said steps (a) and (b) are carried out so that the Cr-content of the first magnetic layer is larger than that of a lowermost one of the second magnetic layers disposed closest to the first magnetic layer, the sum total content of nonmagnetic elements which are other than Cr and have the larger atomic radius than Co of the first magnetic layer is larger than the lowermost one of the second magnetic layers, and between two mutually adjacent second magnetic layers the Cr-content and the sum total content of the nonmagnetic elements

are respectively larger for a second magnetic layer disposed closest to the first magnetic layer.

16. (Currently Amended) A magnetic storage apparatus comprising:

a head; and

at least one magnetic recording medium provided with a substrate, and a magnetic layer made of a CoCr-based alloy, having a multi-layer structure and disposed above the substrate,

said multi-layer structure having a first magnetic layer disposed above said substrate and at least one second magnetic layer disposed directly on said first magnetic layer on an opposite side from said substrate,

said first magnetic layer having a Cr-content larger than that of said second magnetic layer, and having a larger sum total content of nonmagnetic elements which are other than Cr and have a larger atomic radius than Co than said second magnetic layer.

17. (Previously Added) The magnetic recording medium as claimed in claim 5, wherein a sum total of elements other than Cr is larger for the second underlayer than the first underlayer.

18. (Previously Added) The method of producing the magnetic recording medium as claimed in claim 12, wherein said steps (c) and (d) form the first and second

underlayers so that a sum total of elements other than Cr is larger for the second underlayer than the first underlayer.

B1
cont'd